

## Prof. Dr. Hassan Hanafy



Assistant Professor  
Physics Department  
Faculty of Science, Zulfi  
Majmaah university

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### Research Interests:

**Atomic Collision:** (ion – surface collision & e-atom/ion collision)

Photonic Crystals: (electromagnetic waves propagations & photonic band gaps)

### Language

Arabic, English

### Qualification (Career and University Education)

1997-1999	PhD Degree (Atomic Physics )	<u>Internal</u> part at Faculty of science, Beni-Suef, Cairo University
2000-2002		<u>External</u> part at Stockholm University , Sweden
1991-1995	MS. C. Degree (Experimental Physics)	Faculty of Science, Beni-Suef, Cairo University.
1985-1989	B. Sc. Degree (Physics)	Grade “very good “, Faculty of Science, Beni-Suef, Cairo University.

### Career

1989-1995	Demonstrator ,	Physics Department, faculty of science, Beni-Suef, Cairo University
1995-2002	Lecturer ,	Physics Department, Faculty of Science, Beni-Suef, Cairo University
2002-2011	Assistant Professor,	Physics Department, Faculty of Science, Beni-Suef, Cairo University
2011- now	Assistant Professor ,	Physics Department, Zulfi College of Science, Majmaah university , Saudi Arabia

### Short Visits

2000-2002	Atomic physics Department,	Stockholm University , Sweden
2011-	Assistant Professor,	Physics Department, Zulfi College of Science, Majmaah university , Saudi Arabia.

### Publication

- 1- H. Hamdy, M. A. K. El-Fayoumi, M. M. Mahdy, H. Hanafy and F. Shahin “  
Excitation Function and Polarisation of Optical Radiation Induced by Electron

Impact on Helium” *Egypt. J. Phys.* Vol. 27, No. 1-2 pp. 17-29 (1996).

- 2- T. Ali, H. Hanafy and F. Shahin “ Excitation Cross Section of the Calcium  $\lambda=468.52$  nm line by Electron Impact” *4<sup>th</sup> Radiation Conference, Alexandria 15-19 Nov.(1998)*.
- 3- H. Hamdy, M. A. K. El-Fayoumi, M. M. Mahdy, H. Hanafy and F. Shahin “ Polarisation Measurements of the Emitted Light Induced by Electron Impact on Zinc Atoms” *Egypt. J. Phys.* Vol. 31, No. 2 pp. 189-196 (2000).
- 4- Gy. Viktor, M. Bjorkhage, H. Hanafy, S. Leontein, A. paal, Z. D. Pesic, E. Lindroth, and R. Schuch " X- ray Emission from Slow Highly Charged Pb Ions Colliding with Metal Surfaces", 20<sup>th</sup> Summer School and International Symposium on the Physics of Ionized Gases, *Zlatibor, Yugoslavia, September 4-8, (2000)*.
- 5- R. Schuch , H. Hanafy, Z. D. Pesic, Gy. Viktor, V. Hoffmann, D.Niemann, and N.Stolterfoht. " Scattering of Highly Charged Ions from Solid Surfaces", 20<sup>th</sup> Summer School and International Symposium on the Physics of Ionized Gases, *Zlatibor, Yugoslavia, September 4-8, (2000)*.
- 6- Z. D. Pesic, H.Hanafy, V. Hoffmann, D.Niemann, R. Schuch, N.Stolterfoht and Gy. Viktor, " Energy and Angular Dependence of Neutralization in Scattering of Highly Charged Argon Ions from a Gold Surface" 20<sup>th</sup> Summer School and International Symposium on the Physics of Ionized Gases, *Zlatibor, Yugoslavia, September 4-8, (2000)*.
- 7- H.Hanafy, M. Bjorkhage, S. Leontein, E. Lindroth, Z. D. Pesic, B. Rosner, J. Weimer, Gy. Viktor, and R. Schuch, “Observation of Internal Dielectronic Excitation with Slow Highly Charged Lead Ions hitting a Surface” *Physica Scripta. T92*, 147-50(2001)  
<http://iopscience.iop.org/1402-4896/2001/T92/008> - Google Search
- 8- H. Hanafy, M. Bjorkhage, Z. D. Pesic, , E. Lindroth, Gy. Viktor, A. paal and R. Schuch, “ Relaxation time of Highly Charged Lead ions hitting a Metallic Surface” *Annual Report, Manne Siegabhn Laboratory, Sweden, 52-54 (2000)*
- 9- Z. D. Pesic, J. Anton, S. Atanassova, H. Hanafy, Gy. Viktor, J. Weimer, M. Bjorkhage, S. Leontein and R. Schuch, “ Photon-Photon Coincidence Study in the Relaxation of Highly Charged Lead ions Colliding with Tantalum Foil” *Annual Report, Manne Siegabhn Laboratory, Sweden, 32-34 (2001)*.
- 10- M. A. El-Fayoumi, M. Mhahdy and H. Hanafy “Radiative Rates and Lifetimes for Highly Ionized Zinc Ions”, *Sixth Radiation Physics Conference, Assiut, Egypt, 27-30 Oct. (2002)*. *Arab J. Nucl. Sci. Appl.* , 36 - part 1 , 415, (2003)
- 11- H. Hanafy, G. Omar, and F. Shahin "Resonant Transfer Excitation Followed by X rays for  $Ar^{(8+,11+,13+)}$  Ions with L-Shell Excitation", *XXIII International Conference on Photonic, Electronic and Atomic Collisions. Stockholm University, Sweden, 23-29 July, (2003)*.
- 12- Gy. Viktor, J. Anton, S. Atanassova, A. Enulescu, H. Hanafy, A. Paal, Z. D. Pesic, and R. Schuch "Hollow Atom Relaxation Dynamics in Thin Metal Foils", *XXIII International Conference on Photonic, Electronic and Atomic Collisions. Stockholm University, Sweden, 23-29 July, (2003)*.
- 13- Gy. Viktor, S. Atanassova, M. Bjorkhage, H. Hanafy, S. Leontein, Z. D. Pesic, and R. Schuch "Multiplet Photon Emission from Highly-Charged Pb Ions Interacting with Metal Foils", *XXIII International Conference on Photonic, Electronic and Atomic Collisions. Stockholm University, Sweden, 23-29 July, (2003)*.
- 14- H. Hanafy, G. Omar, and F. Shahin, "Isonuclear Trends of Resonant Transfer Excitation for the Collision of  $Ar^{(8+,11+,13+)}$  Ions with L-Shell Excitation" *First International Conference Modern Trends in Physics Research, Cairo Uni., Egypt, 4-9*

April (2004). *AIP*, 748, 118-125, (2005).

15- Hassan Hanafy "Resonant Electron Capture for Be-like Ions with K- and L-shell Excitation" *VII Radiation Physics and Protection Conference, Ismailia, Egypt, 27-30 Nov., (2004). Arab J. Nucl. Sci. Appl., 36, 35-43, (2005).*

16- Z. D. Pestic, Gy. Viktor, S. Atanassova, J. Anton, M. Bjorkhage, A. Paal, H. Hanafy and R. Schuch " Relaxation of slow highly charged ions hitting thin metallic foils, *Phys. Rev. A75, 12903 (2007)*

17- M. Shaban, H. Hanafy, H. Hamdy and F. Shahin, "Optical Excitation Function of the Sr and Sr<sup>+</sup> resonance lines" *VIII Radiation Physics and Protection Conference, Beni Sueif- Fayoum, Egypt, 13-15 Nov., (2006). Arab J. Nucl. Sci. Appl., 40, 405-413, (2007).*

<https://journals.aps.org/pr/abstract/10.1103/PhysRevA.75.012903>

18- H. Hanafy, G. Omar, and F. Shahin, "Resonant Transfer Excitation Cross sections for Phosphorus Ions with K-shell Excitation" *accepted for publication in World Scientific Conference Proceedings (2008). {in press}.*

19- H. Hanafy and F. Shahin, "Emission of x-Rays through the Recombination in the Collision of F-like Ions with Energetic Free Electrons", *Egyptian J. Solid vol. (31), no (2), 259-267, (2008).*

20- Z. D. Pesi, Gy. Viktor, H. Hanafy, A. Enulescu, and R. Schuch, " Two-photon coincidence studies of highly-charged ion relaxation in solids" *Eur. Phys. J. D 54.*

<http://epjd.epj.org/articles/epjd/abs/2009/10/d09199/d09199.html>

21- Arafa H Aly, and Hassan S. Hanafey" Polarization modes control on the transmittance characteristics of one dimensional photonic crystal", *J. Comput. Theor. Nanosci., 8,1916, 2011.*

<http://www.ingentaconnect.com/content/asp/jctn/2011/00000008/00000010/art00003>

22- Arafa H. Aly, Ehab Abdel-Rahman, Hassan S. Hanafey, " Numerical Studies on Electromagnetic Waves Properties in Metallic-Dielectric Photonic Crystal" , *Journal of Electromagnetic Analysis and Applications*, 2011, 3, 465-470.

<http://www.scirp.org/journal/CTA.aspx?paperID=8339>

23- Arafa H Aly, Ahmed Mehaney, and Hassan S. Hanafey, " Phononic Band Gaps in one Dimensional Mass Spring System", *PIERS Proceedings 1043-1047, March 27-30, Kuala Lumpur, MALAYSIA, 2012.*

<http://piers.org/piersproceedings/piers2012KualalumpurProc.php?start=200>

## Teaching Experience

Low Temperature Physics	PHYS 451	College of Science / Zulfi	Majmaah University
General Physics I	PHYS 201	Faculty of Science Beni-Suef	Beni-Suef University
General Physics II	PHYS 202	College of Science / Zulfi	Majmaah University
General Physics II	PHYS 202	Faculty of Science Beni-Suef	Beni-Suef University
Optics	PHYS 323	Faculty of Science Beni-Suef	Beni-Suef University
Optics	PHYS 323	College of Science / Zulfi	Majmaah University
Optics Lab.	PHYS 493	College of Science / Zulfi	Majmaah University

Modern Physics	PHYS 351	Faculty of Science Beni-Suef	Beni-Suef University
Modern Physics Lab.	PHYS 494	College of Science / Zulfi	Majmaah University
Electronic Lab.	PHYS 392	Faculty of Science Beni-Suef	Beni-Suef University
Electronic Physics	PHYS 422	Faculty of Science Beni-Suef	Beni-Suef University
Radiation Physics	PHYS 353	Faculty of Science Beni-Suef	Beni-Suef University
Wave and Vibration	PHYS 321	College of Science / Zulfi	Majmaah University
Atomic and Molecular Physics	PHYS 454	College of Science / Zulfi	Majmaah University
Atomic and Molecular Physics	Phys 454	Faculty of Science Beni-Suef	Beni-Suef University

#### Conferences

**Third International Conference on 'Modern Trend of Physics Research' MTPR-08 Physics Dept., Faculty of Science, Cairo University 6 – 10 April 2008**

#### Training Experience

Training " E- Learning ", Majmaah University , Saudi Arabia

Training " The culture of E-learning" Majmaah University , Saudi Arabia

Training " The Skills of E-learning" Majmaah University , Saudi Arabia

#### Practical Skills

**ICDL (International Computer Driving License )**